CLAIMS

1. A method of code phase tracking comprising the steps of:

(a) receiving a subject signal containing a target pseudorandom noise code;

(b) generating a series of signals containing early and late replica codes corresponding to the target code;

(c) correlating the subject signal with the early and late replica code signals and returning respective early and late correlation values; and

(d) determining the code phase error between the target code and the replica codes from a modified early-minus-late correlation function derived from the early and late correlation values, the modified early-minus-late correlation function being such that its gradient at zero code phase error is increased compared to the true early-minus-late correlation function.

2. A method according to claim 1 wherein the early-minus-late correlation function is modified by modifying either the subject signal, the early and late replica code signals or the early and late correlation values prior to deriving the early-minus-late correlation function.

3. A method according to claim 2 wherein at least one odd harmonic of the power spectrum of the subject signal is reduced in size or removed.

4. A method according to claim 2 wherein at least one even harmonic of the power spectrum of the subject signal is increased in size.

5. A method according to claim 2 wherein the bandwidth of the power spectrum of the subject signal is truncated between harmonics so as to excise an adjacent even harmonic.

6. A method according to claim 2 wherein at least one odd harmonic of the power spectrum at least one of the early and late replica code signals is reduced in size or removed.

7. A method according to claim 2 wherein at least one even harmonic of the power spectrum at least one of the early and late replica code signals is increased in size.

8. A method according to claim 2 wherein the bandwidth of the power spectrum at least one of the early and late replica code signals is truncated between harmonics so as to excise an adjacent even harmonic.

9. A method of code phase tracking substantially as hereinbefore described with reference to the figures.

10. A receiver comprising an antenna for receiving a subject signal containing a target pseudorandom noise code; and a signal processor for implementing a method of code phase correlation according to any preceding claim.

11. A receiver comprising a signal processor for modifying the power spectrum of a received subject signal containing a target pseudorandom noise code so that the power spectrum of the subject signal has either at least one odd harmonic which is reduced in size or removed; at least one even harmonic which is increased in size; or a reduced bandwidth which is truncated between harmonics so as to excise an adjacent even harmonic.

12. A receiver comprising an antenna for receiving a subject signal containing a target pseudorandom noise code and a signal processor, the signal processor comprising a generator for generating a series of signals containing early and late replica codes corresponding to the target code, a correlator for correlating the subject signal with the early and late replica code signals and returning respective early and late correlation values, and means for determining the code phase error between the target code and the replica codes from a modified early-minus-late correlation function derived from the early and late correlation values, such that the gradient of the modified early-minus-late correlation function at zero code phase error is increased compared to the true early-minus-late correlation function.

13. A receiver according to claim 12 wherein the early-minus-late correlation function is modified by modifying either the subject signal, the early and late replica code signals or the early and late correlation values prior to deriving the early-minus-late correlation function.

14. A receiver according to claim 13 wherein at least one odd harmonic of the power spectrum of the subject signal is reduced in size or removed.

15. A receiver according to claim 13 wherein at least one even harmonic of
the power spectrum of the subject signal is increased in size.

16. A receiver according to claim 13 wherein the bandwidth of the power spectrum of the subject signal is truncated between harmonics so as to excise an adjacent even harmonic.

17. A receiver according to claim 13 wherein at least one odd harmonic of the power spectrum at least one of the early and late replica code signals is reduced in size or removed.

18. A receiver according to claim 13 wherein at least one even harmonic of the power spectrum at least one of the early and late replica code signals is increased in size.

19. A receiver according to claim 13 wherein the bandwidth of the power spectrum at least one of the early and late replica code signals is truncated between harmonics so as to excise an adjacent even harmonic.

20. A receiver substantially as hereinbefore described with reference to the figures.